

UNITED STATES PATENT APPLICATION

for

CONTAINER AND WARMER FOR WIPES AND THE LIKE

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Attorney Docket No. 6973P001

CONTAINER AND WARMER FOR WIPES AND THE LIKE

[0001] This non-provisional patent application claims priority to provisional serial number 60/446,016 filed February 8, 2003.

BACKGROUND OF THE INVENTION

[0002] The present invention relates to a portable container for holding and dispensing wipes, for example, baby wipes, hand wipes, and the like. Of particular interest in respect to the present invention are moistened baby wipes made of soft cloths or paper towels and used to clean infants. Baby wipes are typically supplied in bulk in packaging designed to both protect the wipes from damage by contamination and avoid loss of the fluid(s) used to moisten and/or medicate the wipes. This packaging is generally intended to be inexpensive and consequently removing individual wipes from the packaging can be difficult, especially for a person who holds a baby in one hand while removing a wipe from the container with the other. Existing containers do not facilitate ease of removal of individual or small numbers of wipes with one hand, especially in travel situations.

[0003] In addition, existing containers do not provide for reliable heating of wipes to a controlled range of temperatures. It is desirable, especially for wipes which are being transported, to have warm wipes available for cleaning infants. Often parents will remove a wipe from the package and warm it against their skin before using the wipe to clean the infant. This process is time consuming, annoying to the parent because of the cold wipe against the skin, and inconvenient because of the difficulty in retrieving a wipe from the package. Additionally, it

is desirable to carry, keep clean and accessible and warm other articles, for example, baby bottles, pacifiers, diapers, clothing, and the like.

[0004] Others in the art have recognized some of the above needs and deficiencies and have attempted to provide solutions thereto. U.S. Patent No. 5,738,082 to Page, et al. shows a portable baby wipe warmer and container for heating and storing wipes. The container is made of soft fabric material that has at least two compartments with a common heat conduction wall between (col. 1, l. 51-67). The container has two zippers 5 & 6 for opening (col. 2, l. 26 – 28). The container may be used for other baby articles which are enhanced by warmth (col. 2, l. 18-22). The heat for Page's warmer is provided by an optional heat disc of Figure 3. The disc is preferably a microwavable gel pack, exothermic gel boil pack, most preferably a microwavable gel pack (col. 3, l. 5-12). Examples of these gel packs are given (col. 3, l. 12-18) which include the exothermic dry heat organic oxidation pack HotHands™ by Heatmax, Inc. of Dalton, GA. This product contains a mixture of natural ingredients that when exposed to air react together to produce heat. This is accomplished through an extremely fast oxygenation (or rusting) process. Ingredients include: iron powder, water, salt, activated charcoal and vermiculite. HeatMax, Inc. has perfected the process so that their warmers, depending on the individual product, produce heat anywhere from 100°F to 180°F for a duration of 1 to 20+ hours. These warmers are used and disposed of in everyday garbage.

[0005] While Page's warmer is useful for portable applications, it has several disadvantages, including difficulty in removing the wipes due to the use of zippers 5 & 6 for opening. The use of zippers in conjunction with the soft flexible fabric makes it difficult to open with one hand. In addition, the use of disposable exothermic warmers, or microwavable gel warmers creates problems ensuring a reliable supply of warmer discs. When the microwavable gel warmer has

cooled, it must be microwaved again. When the disposable exothermic warmer is used up, it must be replaced. Additionally, there is no suggestion for regulating the temperature of the wipes in the container. While the exothermic warmer may be designed to maintain a specific heat for the warmer itself, there is no suggestion for regulating the amount of heat transferred from this disc to the wipes in the container. Consequently, as Page et al.'s container is exposed to differing ambient heat temperatures and differing heat loss due to the amount and frequency of opening, there is no assurance that the wipes will remain the proper temperature, or within a range of proper temperatures, and may very well be maintained in a too hot or too cold condition. Further, with either of the suggested heat sources, once the disc is inserted in the warmer, it continues to warm and cannot be turned off. This unnecessarily wastes energy and uses up discs when the warmer is only used for short periods of time.

SUMMARY OF THE INVENTION

[0006] The present invention relates to a convenient, durable, and easily rechargeable warming container and dispenser for baby wipes and the like. The container serves to carry, store, protect, maintain in a clean state, maintain at a proper temperature or range of temperatures, and/or make conveniently available the contents thereof. It will be recognized that while the invention is described in its preferred embodiment with respect to a dispenser for baby wipes, the invention is equally useful for many other types of wipes, swabs, cloths, pads, towels, and the like, as well as other types of articles which may benefit from being carried, protected, kept in a clean state, warmed and/or made conveniently available. Such wipes and articles may be contained alone or in various combinations as desired by the user.

[0007] Applicant herein utilizes the term wipe to include not only baby wipes, but also the many types of wipes, swabs, cloths, pads, towels, and the like which are commonly removed from a container by hand in single or small quantities at a time, and used by hand or with an appliance for cleaning, moistening, treating and/or medicating various surfaces. One of ordinary skill in the art will recognize that the invention described herein by way of example may be utilized for other types of articles which may benefit from being protected, stored, kept in a clean state, warmed, and made conveniently available. Such wipes may be made of cloth, paper, plastic or other material as is known or may come to be known in the art. Examples of wipes, as defined by the inventor, include but are not limited to, dry, moistened and/or medicated swabs, mops, cloths, pads, towels, towelettes, and tissues. Of particular interest in respect to the present invention are moistened baby wipes made of soft cloths or paper towels and used to clean infants, and related baby articles. For certainty herein, in applications where such small quantities mentioned above are not known in the art with sufficient precision to enable understanding of the invention, small quantities shall be less than 13.

[0008] The preferred embodiment of the invention preferably includes a durable, rigid or semi-rigid container having dimensions such that holding and carrying with one hand are convenient and having an opening arrangement facilitating one hand operation and removal of items therefrom, insulation to prevent loss of heat, a heating element for heating the contents, an energy source supplying the heating element with energy, a temperature sensing element for sensing the temperature of the contents of the container directly or indirectly, and a controlling element for controlling the temperature of the contents in response to the temperature sensing element. The invention may include other features and configurations which will be known to

those of ordinary skill in the art from the teachings herein taken in conjunction with reference to the drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[009] Figure 1 is a diagram illustrating the principal of the heating system of the invention.

[0010] Figure 2 is a diagram for an embodiment of the heating system of the invention utilizing electricity as an energy source.

[0011] Figure 3 is a diagram of an embodiment of the heating system of the invention utilizing exothermic fuel as an energy source.

[0012] Figure 4 is a diagram illustrating the principal of the case of the invention.

[0013] Figure 5 is a diagram of a detail of the diagram of Figure 4.

DETAILED DESCRIPTION OF THE INVENTION

[0014] Figures 1-3 demonstrate the heating and control of the contents of the container of the invention while Figures 4 and 5 demonstrate the container and arrangement of parts thereof in relation to the heating and control portions of the invention.

[0015] Figure 1 shows an energy source 1 which stores energy in a suitable form known to those of ordinary skill, a heating element and control 2 which receives energy from energy source 1 via coupling 5 and converts that energy to heat which heats the container and wipes 3, the temperature of which is sensed directly or indirectly by temperature sense element 4 via coupling 7. The control of heating element 2 is responsive to the temperature sense element 4 via coupling 8 to control the amount of heat produced by 2 to be coupled to 3.

[0016] Energy source 1 may be of any known type and may, for example, store energy in electrical or chemical form, for example, such as by battery or fuel container. Heating element and control 2 may be of any known type and form chosen for compatibility with the stored energy of 1 and configuration and expected contents of 3. Examples of heating elements which may be used are resistive electrical components, chemical oxidizers such as burners, and catalytic converters. The container 3 will be described in more detail and understood more specifically in respect to the preferred embodiment herein and is preferred to provide sufficient storage space for the needed number of wipes, as well as including insulation to prevent heat loss, and have a mechanical design which facilitates attachment and operation of elements 1, 2 and 4, as well as convenient usage and operation by the user. Temperature sensor 4 may be of any known type and is selected to facilitate operation with the container 3, the particular contents expected to be stored in 3, and the particular energy source 1 and heating element and control 2. Examples of such temperature sense elements include thermostatic controls constructed with bimetallic strips

which open and close electrical contacts or fluid or gas valves, thermocouples which produce varying electric potentials in response to varying temperatures, thermally sensitive electronic elements which change resistance or junction voltage in response to varying temperature, and optical sensors which sense the optical (i.e. infrared) radiation given off by warm elements.

[0017] It will be understood that combinations of temperature sensors may be utilized, and while sensing 4 and heating and control 2 are shown separately, such functions may be intermixed and combined as is conveniently known in the art. For example, an electronic component may be utilized for temperature control with a bimetal strip used as an over-temperature safety guarding against failure of the primary control. As another example, the heating element may be composed of a restive device having a positive temperature coefficient wherein the current flow through the element is self-limiting to maintain a fixed temperature. Such positive temperature coefficient devices are commonly used for self-resetting fuses. Such an embodiment is shown in Figure 2.

[0018] Figure 3 illustrates another alternative embodiment wherein the electricity source (5, 5a) is replaced with an exothermic fuel container 1b, which flows through oxidizer and fuel flow component 2b causing heat for wipes and container 36. The general use of exothermic heating is well known.

[0019] Figures 4 and 5 illustrate embodiments of the case of the present invention. The case includes a front face 510, a rear face 520, and a top 530. Fastener 512, switch 514, indicators 516, hinges 522, and power connector 524 are also shown. Figure 5 also shows an alternative embodiment with fastener 513 on front 511 and a variation on rear face 521. A variation to indicators 517 is also shown.